

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (New) A method of producing a mixture of carbon monoxide and hydrogen

from methane natural gas by steam reforming, oxygen reforming, or steam-oxygen reforming, comprising the steps of:

contacting said methane natural gas with a catalyst, wherein said catalyst consists essentially of a  $\Theta\text{-Al}_2\text{O}_3$ -supported nickel catalyst of the formula:



wherein  $\text{M}_1$  is an alkali metal; each of  $\text{M}_2$  and  $\text{M}_3$  is an alkaline earth metal; and  $\text{M}_4$  is a IIIB element or a lanthanide; wherein the nickel reforming catalyst is composed of:

3-20 wt. % of nickel (Ni) against  $\Theta\text{-Al}_2\text{O}_3$ ;

0-0.2 molar equivalent of  $\text{M}_1$  and 0-4 molar equivalent of  $\text{M}_2$  cocatalysts against nickel;

0-1.0 molar equivalent of  $\text{M}_3$  and 0.01-1.0 molar equivalent of  $\text{M}_4$  against zirconium; and

0.01-1.0 molar equivalent of  $\text{ZrO}_2$  against  $\Theta\text{-Al}_2\text{O}_3$ .

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maintaining the methane natural gas-to-steam molar ratio in the range of from 0 to 6;

maintaining the methane natural gas-to-oxygen molar ratio in the range of 0 to 1;

maintaining the reaction temperature in the range of 600 to 1000°C;

maintaining the reaction pressure in the range of 0.5 to 20 atm.; and

maintaining the space velocity in the range of 1,000 to 1,000,000 cc/hr·g-cat.

8. (New) The method of Claim 7, wherein said method comprises steam reforming and the methane natural gas-to-steam molar ratio is in the range of from 1 to 6.

9. (New) The method of Claim 7, wherein said method comprises oxygen reforming and the methane natural gas-to-oxygen molar ratio is in the range of from 0.1 to 1.

10. (New) The method of Claim 7, wherein said method comprises steam-oxygen reforming and the methane natural gas-to-steam molar ratio is in the range of from 1 to 5, and the methane natural gas-to-oxygen molar ratio is in the range of from 0.1 to 1.

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